

## Forestland Interpretations

Forestland interpretations are important to good management. The management of trees begins with an understanding of the soil where they grow or are to be grown. Some soils are very suitable for growing wood crops; others barely support tree cover. Different tree species may vary in production on the same soil.

Forestland interpretations should be used to assist land users in planning, installing, and maintaining forestland management systems.

### *Forest Management and Productivity*

The Forestland Management and Productivity tables presents information about suitable for producing timber for each soil map unit. Management concerns, which include hand planting, mechanical planting, use of harvesting equipment, mechanical site preparation (surface), roads (natural surface), erosion on roads and trails, off-road/trail erosion, soil rutting, log landings, seedling survival, are listed by ratings of:

- Not Limited (0.00)
- Slightly Limited (0.01 to 0.30)
- Moderately Limited (0.31 to 0.60)
- Limited (0.61 to 0.99)
- Very Limited (1.00)

Information on potential productivity includes plant competition, common trees, site index, productivity class, and trees to plant.

### *Management Concerns*

**PLANT COMPETITION** - A rating of slight indicates little or no competition from other plants; moderate indicates that plant competition is expected to hinder the development of the fully stocked stand of desirable trees; and severe means that plant competition is expected to prevent the establishment of a desirable stand unless the site is intensively prepared, weeded, or otherwise managed for the control of undesirable plants.

**POTENTIAL PRODUCTIVITY** - This is discussed under the ordination class symbol.

**COMMON TREES** - Trees that generally occur on the soil are listed regardless of economic importance.

**SITE INDEX AND PRODUCTIVITY CLASS** - These are discussed under ordination class symbol.

**TREES TO PLANT** - Trees that are suitable for commercial wood production and that are adapted to the soil.

**HAND PLANTING** – ratings are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, a water table, and ponding. Ratings indicate the expected difficulty of hand planting, which includes the proper placement of root systems of tree seedlings to a depth of up to 12 inches, using standard hand planting tools. It is assumed that necessary site preparation is completed before seedlings are planted.

**MECHANICAL PLANTING** – ratings are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, a water table, and ponding. Ratings indicate the expected difficulty using a mechanical planter, which includes proper placement of root systems of tree seedlings to a depth up to 12 inches. It is assumed that necessary site preparation is completed before seedlings are planted.

**USE OF HARVEST EQUIPMENT** – ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, surface texture, a water table, and ponding. Ratings indicate the suitability for operating harvest equipment for off-road transport or harvest of logs and/or wood products by ground-based wheeled or tracked equipment.

**MECHANICAL SITE PREPARATION (SURFACE)** – ratings are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, a water table, and ponding. The part of the soil from the surface to a depth of about 12 inches is considered in the ratings. Ratings indicate the suitability of using surface-altering soil tillage equipment to prepare the site for planting or seeding.

**ROADS (NATURAL SURFACE)** – ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, surface texture, a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads on which trucks transport logs and other wood products from the site.

**EROSION (ROAD/TRAIL)** – ratings are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails.

**EROSION (OFF-ROAD/OFF-TRAIL)** – ratings are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance.

**SOIL RUTTING** – ratings are based on a water table, rock fragments on or below the surface, surface texture, depth to a restrictive layer, and slope. Ratings indicate the hazard or risk of ruts in the uppermost soil surface layers by operation of forest equipment. Soil displacement and puddling (soil deformation and compaction) may occur simultaneously with rutting.

**LOG LANDINGS** – ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, surface texture, a water table, ponding, flooding, and the hazard of soil slippage. Ratings indicate the suitability of the soil at the forest site to serve as a log landing and allows the efficient and effective use of equipment for the temporary storage and handling of logs.

**SEEDLING SURVIVAL** – ratings are based on flooding, ponding, a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. Ratings indicate the impact of soil, physiographic, and climatic conditions on the survivability of newly established tree seedlings.

See the National Forestry Manual, Subpart B for criteria used in rating management concerns.

*This subsection includes:*

- **(a) Forest Management (one or two tables)**

Woodland Management and Productivity

(Only the soils suitable for production of commercial trees are listed)

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Plant competition	Common trees	Site index	Volume* of wood fiber	
									m3/ha	
66000: Moniteau-----	4W	Slight	Severe	Moderate	Moderate	Severe	Pin oak-----	70	4	Black willow, eastern cottonwood, green ash, pin oak, silver maple, sweetgum
70020: Blueye-----	2A	Slight	Slight	Slight	Slight	Moderate	Blackjack oak-----	---	---	Eastern redcedar
							Eastern redcedar----	35	2	
							Post oak-----	---	---	
70021: Moko-----	2X	Slight	Moderate	Moderate	Severe	Slight	Eastern redcedar----	30	2	Eastern redcedar
70022: Tonti-----	3D	Slight	Slight	Slight	Moderate	Slight	Black oak-----	60	3	Black oak, shortleaf pine
							Post oak-----	---	---	
							Shortleaf pine-----	53	3	
71250, 71251: Britwater-----	8A	Slight	Slight	Slight	Slight	Moderate	Eastern redcedar----	50	4	Northern red oak, shortleaf pine, white oak
							Northern red oak----	70	4	
							Shortleaf pine-----	70	8	
73000: Pomme-----	3A	Slight	Slight	Slight	Slight	Moderate	Northern red oak----	65	3	Black walnut, white oak, northern red oak
							White oak-----	65	3	
73007: Plato-----	3D	Slight	Slight	Slight	Moderate	Slight	Black oak-----	60	3	Black oak, shortleaf pine
							Shortleaf pine-----	---	---	
							White oak-----	55	3	
73010: Wilderness-----	3D	Slight	Slight	Moderate	Moderate	Slight	Black oak-----	63	3	Black oak, shortleaf pine
							Northern red oak----	64	3	
							White oak-----	56	3	
73013: Lowassie-----	2W	Slight	Severe	Severe	Severe	Severe	Black oak-----	50	2	Black oak, pin oak
							Blackjack oak-----	---	---	
							Post oak-----	45	2	
73014: Clarksville-----	3F	Slight	Slight	Moderate	Slight	Moderate	Black oak-----	61	3	Shortleaf pine, white oak, black oak
							Northern red oak----	61	3	
							Shortleaf pine-----	61	6	
							White oak-----	58	3	
73015, 73016: Viraton-----	3D	Slight	Slight	Moderate	Moderate	Slight	Black oak-----	60	3	Black oak, shortleaf pine
							Shortleaf pine-----	56	6	
							White oak-----	55	3	

See footnote at end of table.

## Woodland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Plant competition	Common trees	Site index	Volume* of wood fiber	
									m3/ha	
73017:										
Bendavis-----	2R	Moderate	Moderate	Moderate	Slight	Moderate	Black oak-----	48	2	Shortleaf pine
							Post oak-----	45	2	
							Shortleaf pine-----	---	---	
Poynor-----	3R	Moderate	Moderate	Moderate	Slight	Moderate	Black oak-----	53	3	Black oak, shortleaf
							Shortleaf pine-----	55	3	pine
							White oak-----	48	2	
73018:										
Clarksville----	3R	Moderate	Moderate	Moderate	Slight	Moderate	Black oak-----	61	3	Shortleaf pine,
							Northern red oak----	61	3	white oak, black
							Shortleaf pine-----	61	6	oak
							White oak-----	58	3	
73019, 73020:										
Poynor-----	3A	Slight	Slight	Moderate	Slight	Moderate	Black oak-----	53	3	Black oak, shortleaf
							Shortleaf pine-----	55	3	pine
							White oak-----	48	2	
73021:										
Poynor-----	3R	Moderate	Moderate	Moderate	Slight	Moderate	Black oak-----	53	3	Black oak, shortleaf
							Shortleaf pine-----	55	3	pine
							White oak-----	48	2	
73022:										
Alred-----	3F	Slight	Moderate	Severe	Slight	Moderate	Northern red oak----	65	3	Northern red oak,
							Shortleaf pine-----	70	8	white oak
							White oak-----	65	3	
Bardley-----	2D	Slight	Slight	Slight	Moderate	Slight	Black oak-----	54	3	Black oak, eastern
							Post oak-----	48	2	redcedar, shortleaf
							White oak-----	42	2	pine
73023, 73024:										
Mano-----	3F	Slight	Slight	Moderate	Slight	Moderate	Black oak-----	63	3	Northern red oak,
							Northern red oak----	---	---	shortleaf pine
							White oak-----	58	3	
Ocie-----	3F	Slight	Slight	Moderate	Slight	Slight	Black oak-----	58	3	Northern red oak,
							Northern red oak----	---	---	shortleaf pine
							White oak-----	57	3	
73025:										
Gatewood-----	2A	Slight	Slight	Slight	Slight	Moderate	Black oak-----	42	2	Eastern redcedar,
							Eastern redcedar----	40	3	shortleaf pine
							Post oak-----	43	2	
							White oak-----	45	2	
Ocie-----	3F	Slight	Slight	Moderate	Slight	Slight	Black oak-----	58	3	Northern red oak,
							Northern red oak----	---	---	shortleaf pine
							White oak-----	57	3	
73026:										
Gatewood-----	3F	Slight	Slight	Moderate	Slight	Slight	Black oak-----	58	3	Northern red oak,
							Northern red oak----	---	---	shortleaf pine
							White oak-----	57	3	

See footnote at end of table.

## Woodland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Plant competition	Common trees	Site index	Volume* of wood fiber m3/ha	
73026: Ocie-----	2A	Slight	Slight	Slight	Slight	Moderate	Black oak----- Eastern redcedar---- Post oak----- White oak-----	42 40 43 45	2 3 2 2	Eastern redcedar, shortleaf pine
73028: Rueter-----	3R	Severe	Severe	Moderate	Slight	Moderate	Black oak----- Northern red oak---- White oak-----	61 61 58	3 3 3	Shortleaf pine, white oak, northern red oak
Bardley. 73029: Gasconade-----	2D	Slight	Moderate	Moderate	Severe	Slight	Blackjack oak----- Chinkapin oak----- Eastern redcedar---- Post oak-----	--- 40 27 ---	--- 2 2 ---	Eastern redcedar
Gatewood-----  Rock outcrop.	2A	Slight	Slight	Slight	Slight	Moderate	Black oak----- Eastern redcedar---- Post oak----- White oak-----	42 40 43 45	2 3 2 2	Eastern redcedar, shortleaf pine
73030: Gasconade-----	2R	Moderate	Severe	Severe	Severe	Slight	Blackjack oak----- Chinkapin oak----- Eastern redcedar---- Post oak-----	--- 41 27 ---	--- 2 2 ---	Eastern redcedar
73032, 73033: Gatewood-----	2A	Slight	Slight	Slight	Slight	Moderate	Black oak----- Eastern redcedar---- Post oak----- White oak-----	42 40 43 45	2 3 2 2	Eastern redcedar, shortleaf pine
73051: Winnipeg-----	3A	Slight	Slight	Slight	Slight	Slight	American sycamore--- Black oak----- Black walnut----- Shortleaf pine----- White oak-----	--- --- --- --- 60	--- --- --- --- 3	American sycamore, black walnut
74626: Tanglenook-----	2W	Slight	Severe	Moderate	Moderate	Severe	Eastern cottonwood-- Silver maple-----	90 80	7 2	American sycamore, eastern cottonwood, pin oak, silver maple
74627: Hartville-----	3C	Slight	Slight	Severe	Severe	Slight	White oak-----	55	3	Eastern cottonwood, pin oak
75377: Racket-----	5A	Slight	Slight	Slight	Slight	Moderate	Black cherry----- Black walnut----- Northern red oak---- White ash-----	--- 72 --- ---	--- 5 --- ---	Black walnut, northern red oak

See footnote at end of table.

## Woodland Management and Productivity--Continued

Map symbol and soil name	Ordi- nation symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equip- ment limita- tion	Seedling mortal- ity	Wind- throw hazard	Plant competi- tion	Common trees	Site index	Volume* of wood fiber m3/ha	
75379: Kaintuck-----	7W	Slight	Moderate	Slight	Slight	Moderate	American sycamore--- Black walnut----- Northern red oak---- River birch----- White oak-----	90 --- --- --- ---	7 --- --- --- ---	American sycamore, black walnut, green ash, northern red oak
75380: Dapue-----	7A	Slight	Slight	Slight	Slight	---	Northern red oak----	85	4	Black walnut, northern red oak
75381: Bearthicket----	7A	Slight	Slight	Slight	Slight	Severe	American sycamore--- Black walnut----- Cherrybark oak----- Common hackberry---- Pin oak----- Red maple-----	--- --- 95 --- 96 ---	--- --- 9 --- 6 ---	Black walnut, cherrybark oak, eastern white pine, loblolly pine, northern red oak, shortleaf pine, tuliptree, white ash, white oak
75382, 75383: Cedargap-----	3F	Slight	Slight	Moderate	Slight	Moderate	Black oak----- Black walnut----- Green ash-----	66 --- ---	3 --- ---	Black oak, shortleaf pine

\* Volume is the yield in cubic meters per hectare per acre per year calculated at the age of culmination of mean annual increment for fully stocked natural stands.